

## **REMARKS**

Favorable reconsideration of this application is requested in view of the amendments above and the remarks which follow.

### **I. Specification**

The specification has been amended as indicated above to correct typographical errors. No new matter has been added.

### **II. Disposition of the Claims**

Claims 1-26 are pending in this application. Claims 1, 9, 13, 14, 18, 23, 24, and 25 have been amended.

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### **III. Rejections under 35 USC 102**

Claims 1-26 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 6,268,304 (Maeda et al). Reconsideration of this rejection is respectfully requested.

Maeda et al. disclose glass compositions containing  $B_2O_3$  as an essential component and in an amount ranging from 0.5 to 10 mol %. Maeda et al. disclose that the purpose of  $B_2O_3$  is to increase the oxygen atom density of the glass compositions to obtain fracture toughness of the same level or higher than the fracture toughness of soda lime silica glass.  $B_2O_3$  is generally undesirable in the glasses considered in the instant application because  $B_2O_3$  lowers strain point and coefficient of thermal expansion. However, the glasses may contain a very small amount of  $B_2O_3$ . The claims have been amended to include the limitation that the claimed glass compositions have 0.0 to 0.45 mol %  $B_2O_3$ . The examples listed in Tables 1 and 2 of the instant application contain 0.0 mol %  $B_2O_3$ .

Further, Maeda et al. do not disclose the range of  $Al_2O_3$  with sufficient specificity to anticipate the claimed subject matter. Maeda et al. disclose a broad range of  $Al_2O_3$  but do not disclose any specific glass compositions having  $Al_2O_3$  content falling within the ranges claimed in the instant application. In the instant application, the claimed ranges of  $Al_2O_3$  as well as the

ratio of alkalis to  $\text{Al}_2\text{O}_3$  are important to achieving a high strain point and viscosity at the liquidus.

From the foregoing, Maeda et al. do not anticipate the claims as amended. Withdrawal of the rejection of claims 1-26 over Maeda et al. is requested.

#### **IV. Rejections under 35 USC 103**

Claims 1-4, 7-17, 23, 25, and 26 stand rejected under 35 U.S.C. §103(a) as being obvious over JP 09249430 (Maeda '430). Reconsideration of this rejection is respectfully requested.

The abstract of the Maeda '430 patent discloses glass compositions in wt % ranges. Since wt % ranges cannot be directly translated into mol % ranges, the practical recourse in comparing Maeda '430 with the instant application is to examine the specific glass compositions disclosed in Maeda '430. Appendix A shows wt % to mol % conversion of the glass compositions disclosed in Maeda '430. As shown, the disclosed glass compositions contain 10.45-14.66 mol %  $\text{Al}_2\text{O}_3$ . Amended claims 1-4, 7-17, 23, 25, and 26 recite glass compositions having 15.0 to 18.0 mol %  $\text{Al}_2\text{O}_3$ . This claimed range of  $\text{Al}_2\text{O}_3$  does not fall within or touch or overlap with the disclosed range in Maeda '430. Accordingly, these claims are allowable over Maeda '430. Withdrawal of the rejection of claims 1-4, 7-17, 23, 25, and 26 is respectfully requested. Applicant would like to note for the record that the theoretical composition formulated by the Examiner has 24.2 wt %  $\text{Al}_2\text{O}_3$ , which is outside of the range specified in the abstract of the Maeda '430 patent.

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**CONCLUSION**

The rejected claims have been amended and/or shown to be allowable over the prior art. Applicant believes that this paper is fully responsive to each and every ground of rejection cited by the Examiner in the Office Action dated March 19, 2003, and that his application is now in condition for allowance.

Please apply any charges not covered, or any refunds, to Deposit Account 03-3325 (ref. SP01-284).

Respectfully submitted,

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Adenike Adewuya  
Adenike A. Adewuya  
Reg. No. 42,254  
(281) 477-3450

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**APPENDIX A**

**Asahi JP09249430**

Comp. #	1		2		3		4		5	
	wt%	mol%	wt%	mol%	wt%	mol%	wt%	mol%	wt%	mol%
SiO <sub>2</sub>	64.3	69.04	61.1	65.66	56.6	62.3	63.5	70.29	59.2	62.77
Al <sub>2</sub> O <sub>3</sub>	16.7	10.57	16.5	10.45	22.6	14.66	18.8	12.26	17.5	10.94
MgO	3.8	6.08	4.6	7.37	4.2	6.89			6.9	10.91
CaO	5.7	6.56	6.9	7.94	6.3	7.42	7.1	8.42	6.5	7.38
SrO										
BaO										
Na <sub>2</sub> O	3.7	3.85	3.6	3.75	4.1	4.37	4.2	4.51	3.9	4.00
K <sub>2</sub> O	5.7	3.90	6.2	4.25	6.2	4.35	6.4	4.51	5.9	4.00
ZrO <sub>2</sub>				0.58						
Total	99.9	100.00	98.90	100.00	100.00	99.99	100.00	99.99	99.90	100.00

Comp. #	6		7		8		9		10	
	wt%	mol%	wt%	mol%	wt%	mol%	wt%	mol%	wt%	mol%
SiO <sub>2</sub>	64.4	70.08	61.5	65.88	57.9	64.06	59.1	63.6	60.1	65.19
Al <sub>2</sub> O <sub>3</sub>	19.1	12.25	16.6	10.47	18.4	12.00	17.8	11.29	19.8	12.66
MgO	4.8	7.79	4.4	7.03	3.9	6.43	4.4	7.06	4.5	7.28
CaO			7.0	8.03	7.2	8.53	7.9	9.11	6.7	7.79
SrO			0.8	0.50						
BaO					0.9	0.39				
Na <sub>2</sub> O	4.7	4.96	3.9	4.05	0.9	0.97	4.3	4.49	2.4	2.52
K <sub>2</sub> O	7.1	4.93	5.9	4.03	10.8	7.62	6.5	4.46	6.6	4.57
ZrO <sub>2</sub>										
Total	100.1	100.01	100.10	99.99	100.0	100.00	100.0	100.01	100.1	100.01

Comp. #	11		12		13		14	
	wt%	mol%	wt%	mol%	wt%	mol%	wt%	mol%
SiO <sub>2</sub>	61.3	65.28	61.6	64.8	59.6	65.43	57.9	61.32
Al <sub>2</sub> O <sub>3</sub>	18.2	11.42	18.3	11.34	17.8	11.51	17.2	10.73
MgO	4.5	7.14	4.6	7.21	4.4	7.20	6.7	10.58
CaO	6.8	7.76	6.9	7.78	6.7	7.88	7.7	8.74
SrO								
BaO								
Na <sub>2</sub> O	6.1	6.30	8.7	8.87			4.2	4.31
K <sub>2</sub> O	3.1	2.11			11.0	7.70	6.4	4.32
ZrO <sub>2</sub>					0.5	0.27		
Total	100.0	100.01	100.1	100.00	100.0	99.99	100.1	100.00

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